Recent Findings in French Recreational Linguistics

PIERRE BERLOQUIN

I discovered the riches of 10gology with the first issue of Word Ways. Since I had been used to fruitful exchanges of ideas with my readers through a monthly column on mathematical games in Science et Vie, I immediately put the matter into their hands. In November 1968, I described word ladders and word chess diagrams. Many readers answered with results and suggestions. Three more articles were devoted to logology; they raised an even greater interest. The following findings and developments are to be credited to a hundred or so unnamed researchers.

WORD LADDERS

A notable quantity of word ladders have been assembled. Among the most remarkable:

BERGER  BOULES  MOUTON
BERGES  BOULET
BARGES  BOULOT
BAUGES  BOULON
BOUGES  BOUTON

VIVANT  DEMANDE
RIVANT  DEBANDER
REVANT  DEBARDER
DEVANT  DEBORDER
DEVANT  REBORDER
DEVINT  RECORDER
DEVIN  RECARDER
DEVIDE  RETARDER
DECIDE  RETARDES
DECEDE  RETORDES

Word ladders were built for DIEU-CIEL and SATAN-ENFER. Using the former, Rev. F. Bourdeau insisted on proving logo-poetically that CIEL leads to DIEU:
C'est en partant du CIEL
Qui sera notre MIEL
(Pas seulement le MIEN)
Que par un curieux LIEN
En ce céleste LIEU
Nous irons jusqu'à DIEU.

The next step was an extension of the concept of word ladders. Could not more general topological properties of vocabularies be derived from this mode of linking two words? Is not somehow possible to measure the proximity of two words? This question is similar to R. W. Castown's introduction of connectability (WW Feb. 69). It led us to different considerations.

The traditional definition of word ladders appears too restricted for this usage. Too many words are isolated; languages are arbitrarily cut into slices, according to the lengths of words.

Proximity of two consecutive steps of a ladder is preserved through the restrictive precision: "one letter at a time" (WW number 1). That the length of the word must also be preserved, i.e., that "one letter of the first word is changed into a different letter" is usually not specified. However, "one letter at a time," which everybody feels essential to proximity, could very well be taken to mean: "either one letter is changed (remaining in the same place), or one letter is added, or one letter is subtracted."

Should the ordering of the letters also be preserved? Should two contiguous letters be allowed to permute in one step? It does not seem necessary. We are looking for as restrictive a workable definition as possible.

This new definition respects the original intention. It is appropriate for a topological treatment. Connectability may be exhibited for almost any couple of words of any lengths.

New ladders become possible:

<table>
<thead>
<tr>
<th>CHAUD</th>
<th>FILLE</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAUT</td>
<td>FAILLE</td>
<td>YEA</td>
</tr>
<tr>
<td>HAUT</td>
<td>SALE</td>
<td>TEA</td>
</tr>
<tr>
<td>FAUT</td>
<td>SALIE</td>
<td>TEE</td>
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<tr>
<td>FAIT</td>
<td>SALIE</td>
<td>TOE</td>
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<tr>
<td>LAIT</td>
<td>SALIN</td>
<td>TO</td>
</tr>
<tr>
<td>LAID</td>
<td>SALON</td>
<td>NO</td>
</tr>
<tr>
<td>LAIDE</td>
<td>GALON</td>
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<tr>
<td>RAIDE</td>
<td>GALONS</td>
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<td>ROIDE</td>
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</tr>
<tr>
<td>FROID</td>
<td>GARDON</td>
<td></td>
</tr>
<tr>
<td>FALSE — TRUE?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOD — HEAVEN?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAR — PEACE?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WORD WAYS
Can all the words be linked? This might be worked out by a computer. Every word could be listed with its distance from a fixed base. Mr. Castown's definition of isolanos and singularities, and his choice of a terminal word may be useful.

A short ladder links English to French. Note the high significance of the meeting place.

**WORD–WARD–WAR–BAR–BAT–MAT–MOT**

**WORD CHESS DIAGRAMS**

Word chess diagrams demonstrate the poverty of French vocabulary. Temple G. Porter's square (WW number 1)

```
A B C D E
F R S T F
O Y Z U G
N X W V H
M L K J I
```

yields 51 English words. It yields but fifteen French words.

The last edition of *Le Nouveau Petit Larousse* has been selected as the optimal list of French words for this purpose.

Two other squares have been searched:

```
A B C D E   A Z E R T
F G H I J   Y U I O P
K L M N O   Q S D F G
P R S T U   H J K L M
V W X Y Z   X C V B N
```

The latter is suggested by typewriters. They yield eighteen and 54 words.

Then two theoretical problems were raised:

1. Which square of 25 letters contains the greatest number of words?
2. Which squares of 25 letters (Q or a rare letter being set aside) contain no word of two or more letters?

```
N B P D C
F O R A L
S V I E M
J G T V H
Y Z X K Q
```

This square is the richest found yet. It is claimed to contain at least 237 words.

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There are many sterile squares. For instance:

A   O   J   Y   E
X   K   L   W   V
H   M   R   S   T
C   Z   N   G   D
U   F   P   B   I

Again the original definition may be extended. "Word Chess" does not imply
king moves only. Queens, bishop, castle, pawn moves are of no interest. However,
knight moves are sophisticated enough to appeal to blase logologists.

Which words are hidden in the previous squares, knightwise?
Will French vocabulary have its revenge?